

FIG. 1

5'	9				18				27				36				45				54			
	CAG	CCC	CGG	GGC	GCC	GGC	CGC	GCG	CAG	CCT	CGC	TAT	CCC	ACC	CAG	GCT	CCG	GGC						
	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---						
	63				72				81				90				99				108			
	TTC	CAG	GAG	GGT	CGC	GGA	GCC	CCA	AGC	CAT	GAC	TAA	GGA	GCC	CAT	TTG	ATA	GCA						
	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---						
	117				126				135				144				153				162			
	GAG	GTG	GCG	CGC	AGC	CCG	GCG	AGC	CGA	TGA	CGG	ACC	CCT	TCT	TCC	TGC	CTT	CAA						
	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---						
	171				180				189				198				207				216			
	TGC	CTC	AGC	GGA	AGA	TCC	CCA	AGG	GCT	GGA	GCG	AGG	AGC	GCT	GCC	GCT	GGA	CAT						
	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---						
	225				234				243				252				261				270			
	CCT	CCC	GGG	GAG	GCT	GCT	CCG	ACC	TGC	TGC	GCG	GCG	CGT	CTG	AGA	CTG	GGG	ACT						
	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---						
	279				288				297				306				315				324			
	GAG	CCA	CTC	CGC	CGC	CGC	CGG	CGC	CGC	CGC	CGC	CGC	CCG	CTC	CGT	CGC	TGC	CGT						
	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---						
	333				342				351				360				369				378			
	CGG	TCT	GGA	CTG	GCC	CCC	ACC	TCG	CTG	CGC	CCT	CTC	CCC	GGC	CCC	GGC	CCC	GGC						
	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---						
	387				396				405				414				423				432			
	TCG	GGG	CGT	CCC	GGG	GCT	CGC	CCT	GCG	ACC	GCC	GCC	TCC	CGC	GCG	CCG	CGT	CCT						
	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---						
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	CCC	GAC	CCC	GCG	GCG	GCG	ACG	ATG	CCC	GGG	AGG	AGG	GTC	CTG	ACG	GCG	GCG	GCG						
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	CGG	ATG	GTG	GCG	GCC	GGC	GCC	CGG	GTG	TGA	TGC	GAG	CGT	CAC	GGT	GGG	GAT	GCT						
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	GCT	GGC	TGC	GCG	GCG	CTG	AGG	GCC	AGC	GAG	AGC	GAG	AGC	CCG	CCC	GGG	GCG	GAG						
	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---						
	603				612				621				630				639				648			
	GAC	GGA	CTC	ATC	CGG	ATC	TGG	CTG	CAG	CGT	GGG	CTC	GGA	GCT	CCC	CCT	TCC	TCT						
	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---						
	657				666				675				684				693				702			
	CGG	TCT	CCC	TCT	CGG	CCC	CCC	TTT	ATT	TCC	TTC	TTG	CTT	TGC	GTC	TTT	AAC	ACC						
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	711				720				729				738				747				756			
	TCT	CGA	CCC	TGT	CCT	CCC	CCC	GCC	ACT	GGA	AGT	CTT	CCC	GTC	TCT	AAA	TGG	AAT						
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	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---						
													M	I	H	G	R	S						
	819				828				837				846				855				864			
	GTG	CTT	CAC	ATT	GTA	GCA	AGT	TTA	ATC	ATC	CTC	CAT	TTG	TCT	GGG	GCA	ACC	AAG						
	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---						
	V	L	H	I	V	A	S	L	I	I	L	H	L	S	G	A	T	K						
	873				882				891				900				909				918			
	AAA	GGA	ACA	GAA	AAG	CAA	ACC	ACC	TCA	GAA	ACA	CAG	AAG	TCA	GTG	CAG	TGT	GGA						
	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---						
	K	G	T	E	K	Q	T	T	S	E	T	Q	K	S	V	Q	C	G						

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 T W T K H A E G G I F T S P N Y P S

981 990 999 1008 1017 1026  
 AAG TAT CCC CCT GAC CGG GAA TGC ATC TAC ATC ATA GAA GCC GCT CCA AGA CAG  
 K Y P P D R E C I Y I I E A A P R Q

1035 1044 1053 1062 1071 1080  
 TGC ATT GAA CTT TAC TTT GAT GAA AAG TAC TCT ATT GAA CCG TCT TGG GAG TGC  
 C I E L Y F D E K Y S I E P S W E C

1089 1098 1107 1116 1125 1134  
 AAA TTT GAT CAT ATT GAA GTT CGA GAT GGA CCT TTT GGC TTT TCT CCA ATA ATT  
 K F D H I E V R D G P F G F S P I I

1143 1152 1161 1170 1179 1188  
 GGA CGT TTC TGT GGA CAA CAA AAT CCA CCT GTC ATA AAA TCC AGT GGA AGA TTT  
 G R F C G O O N P P V I K S S G R F

1197 1206 1215 1224 1233 1242  
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 L W I K F F A D G E L E S M G F S A

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 CGA TAC AAT TTC ACA CCT GGT AAG TAA GTA CTT AAA AAA AAA ATT TCT TTT TCT  
 R Y N F T P G K \*

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 TCC TCA TTT TTC TAT CTT CAT AGT ACA AAA TCT TGT GTA AGA CAA CAT TAT ACT

1359 1368 1377 1386 1395 1404  
 TTC TCA GAG AAT GTT CCA GTT CTA TTT AAA ACC AAA TCT ACA GTG CTT TTT CTT

1413 1422 1431 1440 1449 1458  
 TTC CCT ACA CAA ATT CTG AAA GGA AAA GAT GTT TTC CTT AAA ACA GCC TAT ACT

1467 1476 1485 1494 1503 1512  
 AGA GGT AAA GAG TAG TGA CTC AAG GCT CTA AAT GGG CAT CAG CCA CAT CAT CAA

1521 1530 1539 1548 1557 1566  
 GTG GAC TTT TGT TAT GAT GGA ATG TGT AAT TGG AGA GAC AGT CTG TGA TAA GGA

1575 1584 1593 1602 1611 1620  
 AAC TAT ACA TAG GAG CTG AAT AAA CTT GAA AAG ACA ATT GTA GTA TTA TAA AAT

1629 1638 1647 1656 1665 1674  
 ATA TCC ACC AAA ATG ATC TTT GGG GAA CTT GAA TCA AAA GTT TAT TTG TTC TGA

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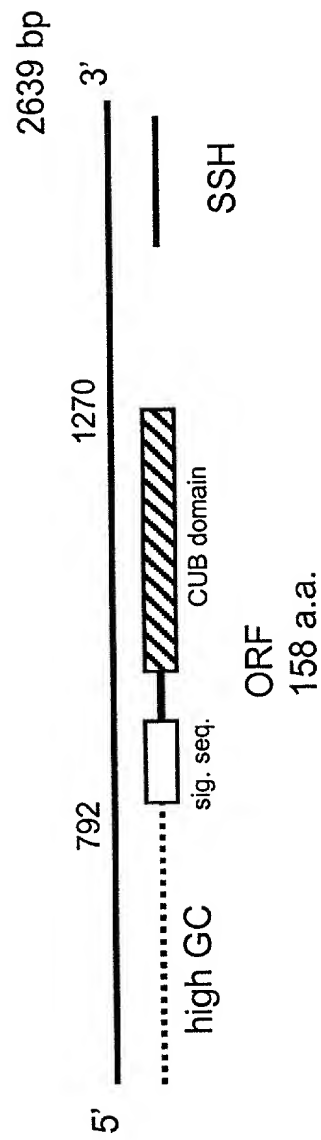
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 1899 1908 1917 1926 1935 1944  
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 ---  
 2007 2016 2025 2034 2043 2052  
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 2061 2070 2079 2088 2097 2106  
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 ---  
 2115 2124 2133 2142 2151 2160  
 TTG AAG TTT GTA TTC CAT GTT AAA GAA GTA ACA TCT AAA TAC AGC TTT GAT ACT  
 ---  
 2169 2178 2187 2196 2205 2214  
 CAG TTA AAA AAC TAA AAT TTT AAA AAT TAT TAA TAT AAG TTT AAT GAT GAC TTT  
 ---  
 2223 2232 2241 2250 2259 2268  
 CAT TAT GAC ATC ATG GGG TAT GTT AAA TCA AGT ATT TAC TGT AGC ATA TAT ATT  
 ---  
 2277 2286 2295 2304 2313 2322  
 AGC TTT AAG CAT TAG GAA TGT TTT TAA TAA TAT CAC TAA AGG ATT GTG GTT TTA  
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 ATT ATG CTT TGC TGA TAA TGG ATT ACT CAC AGA AAT CAT GGG TAT TTC ATG TGC  
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 CTT AAC TGA TAA TTT TGA ATA TAA CCT GTA CCT AGA GAC AGT GAC ATA CGG CAT  
 ---  
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 GTT CTA GGT TTC ATA AGT TAT ATT TTC ATT CTG GGT TTG GTG ATC ATG AAA ATA  
 ---  
 2601 2610 2619 2628 2637  
 ATG TCT TGG ATT TAA AAT TGT GGT TTC ACA AAA AAA AAA AAA AAA AA 3'  
 ---

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 FIG. 1/SHEET 3 OF 3

FIG. 2



**GC content:**

5' non-coding	72%
coding	42%
3' non-coding	30%

# FIG. 3

## A

43.5% identity in 115 residues overlap

BPC-1	33	IFTSPNYPSPKYPDPRECIYIIIEAAPRQCIELYFDEKYSIEPSW-----ECKFDHIEVR
CUB domain	75	IFTSPNFPDRYPPNIDCVRIHSRPQHDVVVKFHHVFHIESTYDKIDAGEECPNDFIEFR
		***** * *** * * * * * * * * * * * * * * *

BPC-1	86	DGPFGRFSGPIIGRFGCGQONPP-VIKSSGRFLWIKFFADGELESMGFSARYNFTPGK
CUB domain	135	DGRYGFSPLIARFCGDRMPKREIRAVSGFLWIRFRSDSMLEYQGFSAEYAIVPSK
		** ***** * * * * * * * * * * * * * * *

## B

35.3% identity in 102 residues overlap in CUB domain 1 of BMP-1

BPC-1	130	GIFTSPNYPSPKYPDPRECIYIIIEAAPRQCIELYFDEKYSIEPSWECKFDHIEVRDGPFGF
BMP-1	336	GNFSSPEYPNGYSAHMCVWRISVTPGEEKIILNFTSM-DLYRSRLCWYDYVEVRDGFWRK
		* *

BPC-1	190	SPIIGRFGCGQONPPVIKSSGRFLWIKFFADGELESMGFSARY
BMP-1	395	VWVRGRFCGKLEPIVSTDSRLWVEFRSSSNWVGKGFFAVY
		***** * * * * * * * * * * * * * * *

39.4% identity in 104 residues overlap in CUB domain 2 of BMP-1

BPC-1	128	EGGIFTSPNYPSPKYPDPRECIYIIIEAAPRQCIELYFDEKYSIEPSWECKFDHIEVRDGPFGF
BMP-1	447	DNGHIQSPNYPDDYRPSKVCIWRIQVSEGFHVGLTF-QSFEIERHDS CAYDYLEVDRGHS
		* *

BPC-1	188	GFSPPIIGRFGCGQONPPVIKSSGRFLWIKFFADGELESMGFSARY
BMP-1	506	BSSNLIGRYCGYENPDDIKSTSSRLWLKFSVSDGSINKAGFAVNF
		* *

36.3% identity in 102 residues overlap in CUB domain 3 of BMP-1

BPC-1	130	GIFTSPNYPSPKYPDPRECIYIIIEAAPRQCIELYFDEKYSIEPSWECKFDHIEVRDGPFGF
BMP-1	605	GSITSPGWPKYPPNKNCIWQLVAPTQYRISLQDFD-FETEGNDVCKYDFVEVRSGLTAD
		* *

BPC-1	190	SPIIGRFGCGQONPPVIKSSGRFLWIKFFADGELESMGFSARY
BMP-1	664	SKLHGKFCGSEKPEVITSQYNNMRVEFKSDNTVSKKGFKAHF
		* *

37.9% identity in 103 residues overlap in CUB domain 4 of BMP-1

BPC-1	130	GIFTSPNYPSPKYPDPRECIYIIIEAAPRQCIELYFDEKYSIEPSWECKFDHIEVRDGPFGF
BMP-1	761	GTITSPNWPDKYPSKKECTWAISSTPGHRVKLTFVEM-DIESQPECAYDHLEVPDGRDAK
		* *

BPC-1	190	SPIIGRFGCGQONPPVIKSSGRFLWIKFFADGELESMGFSARYN
BMP-1	820	APVLGRFCGSKKPEPVLATGNRMFLRFYSDNSVQRKGQASHS
		* *

32.3% identity in 96 residues overlap in CUB domain 5 of BMP-1

BPC-1	139	SKYPPDRECIYIIIEAAPRQCIELYFDEKYSIEPSWECKFDHIEVRDGPFGFSPIIGRFGC
BMP-1	887	NNYPGGVDCEWVIVAEEGYGVELVF-QTFEVEEETDCGYDYIELFDGYDSTAPRLGRYCG
		** *

BPC-1	199	QONPPVIKSSGRFLWIKFFADGELESMGFSARYNFT
BMP-1	946	SGPPEEVYSAGDSVLVKFHSDDTISKKGFLHRYTST
		* *

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FIG. 4

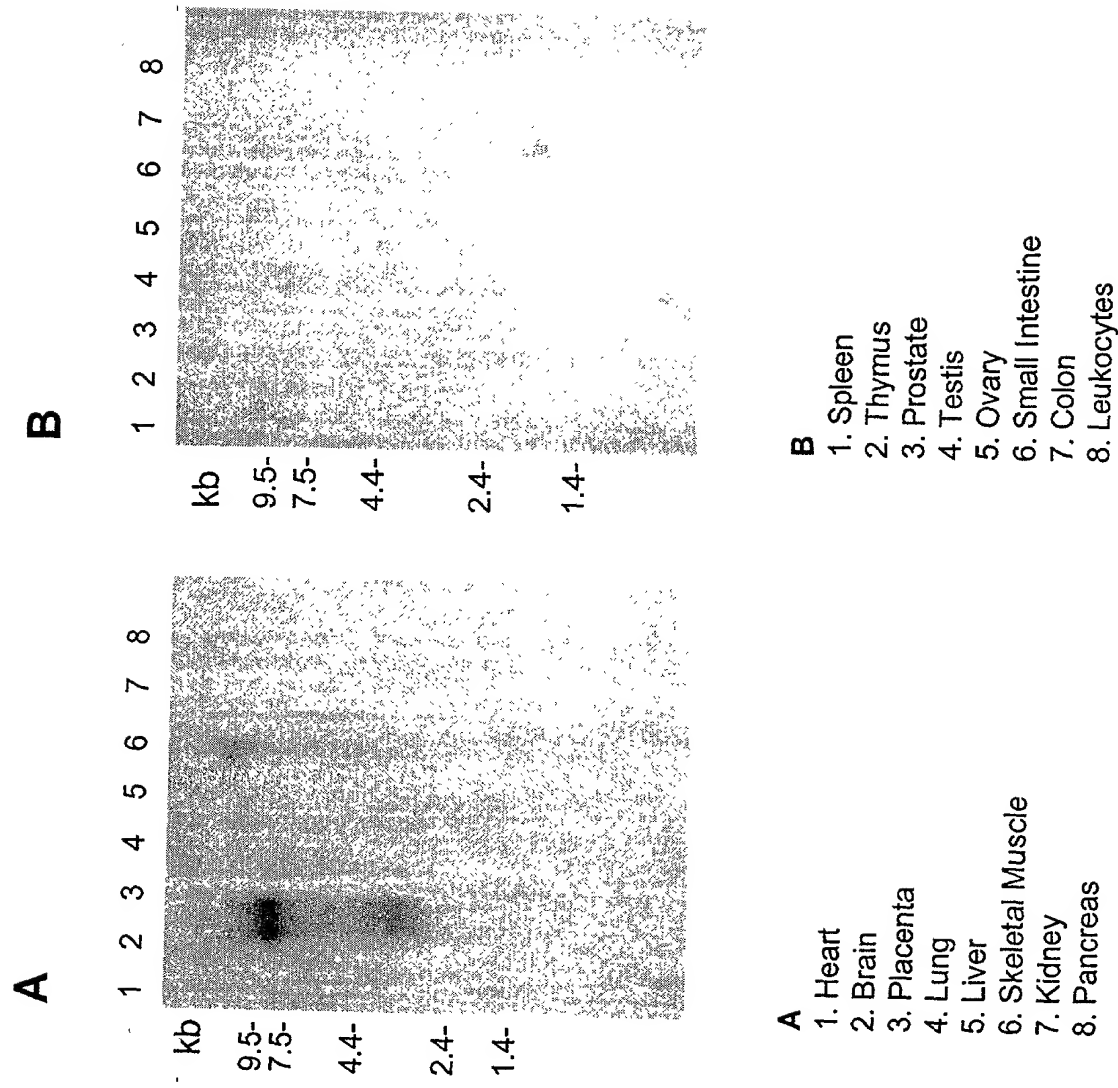
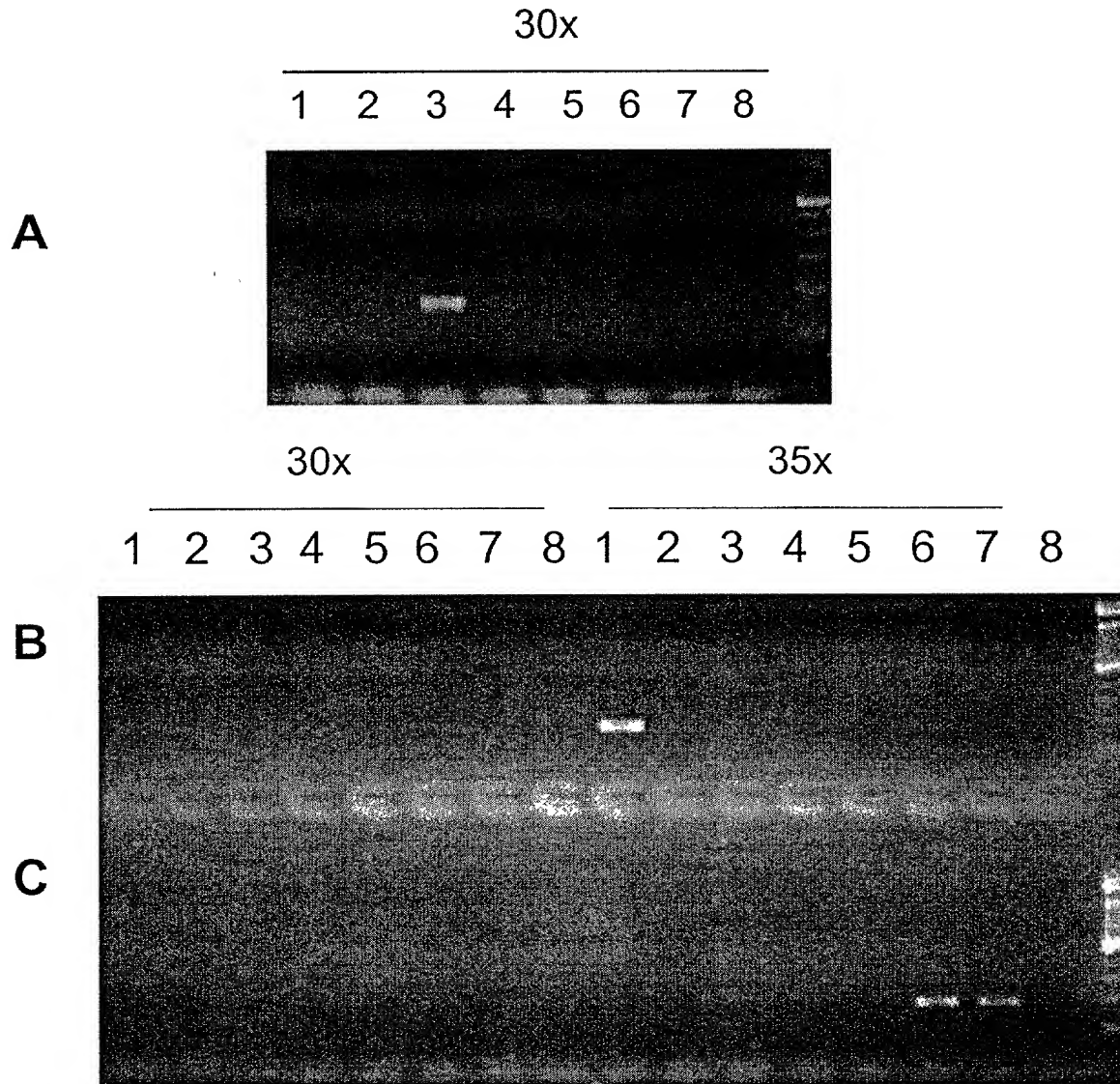


FIG. 5



**Panels:**

**A**

1. Brain
2. Prostate
3. LAPC-4 AD
4. LAPC-4 AI
5. LAPC-9 AD
6. HeLa
7. Murine cDNA
8. Neg. control

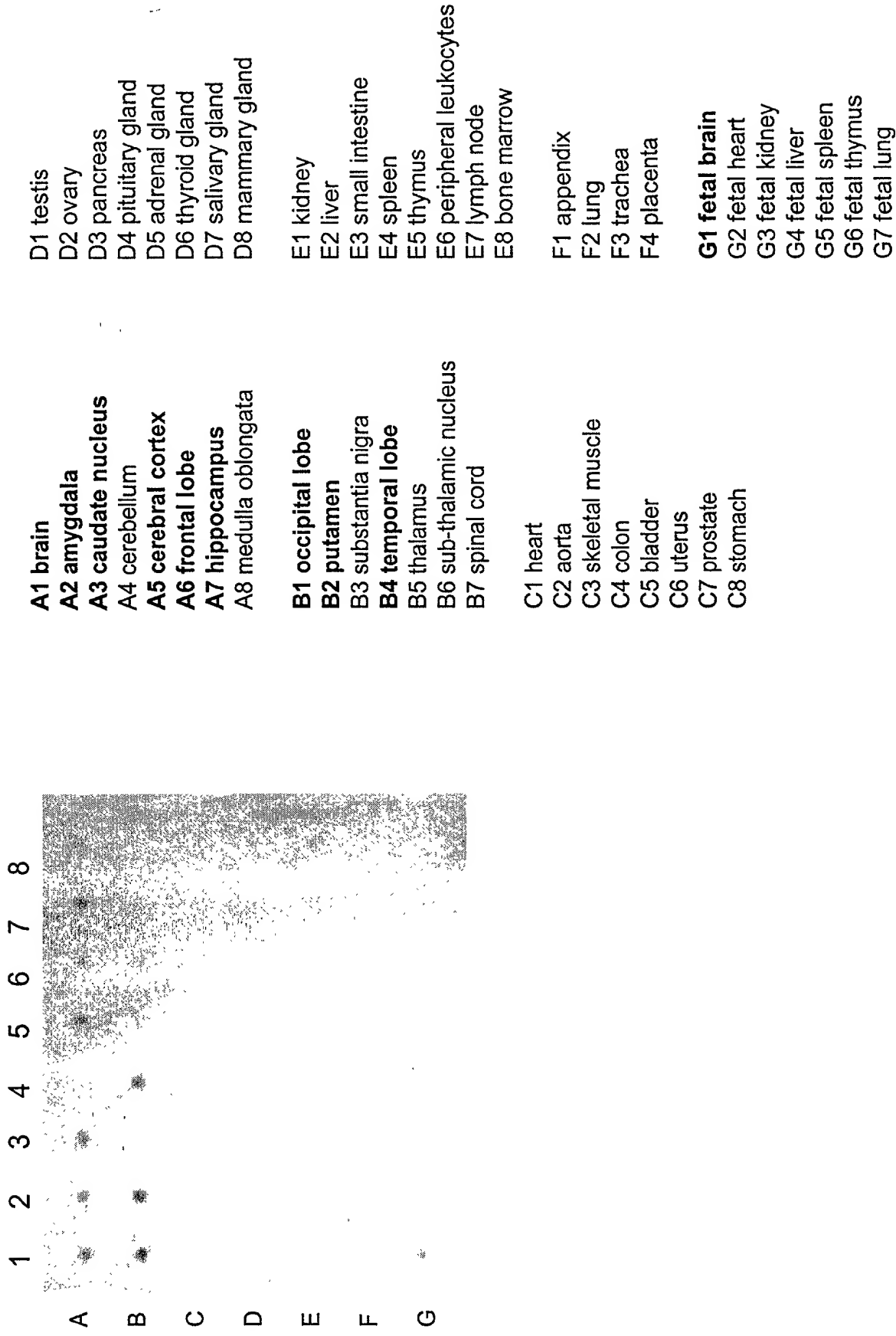
**B**

1. Brain
2. Heart
3. Kidney
4. Liver
5. Lung
6. Pancreas
7. Placenta
8. Skeletal Muscle

**C**

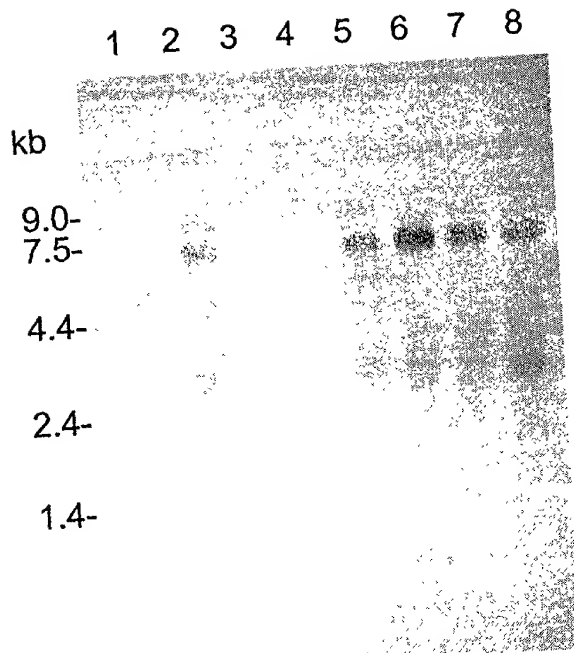
1. Colon
2. Ovary
3. Leukocytes
4. Prostate
5. Small Intestine
6. Spleen
7. Testis
8. Thymus

FIG. 6





**FIG. 7**



**Lanes:**

1. Cerebellum
2. Cerebral Cortex
3. Medulla
4. Spinal Cord
5. Occipital Lobe
6. Frontal Lobe
7. Temporal Lobe
8. Putamen

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FIG. 8

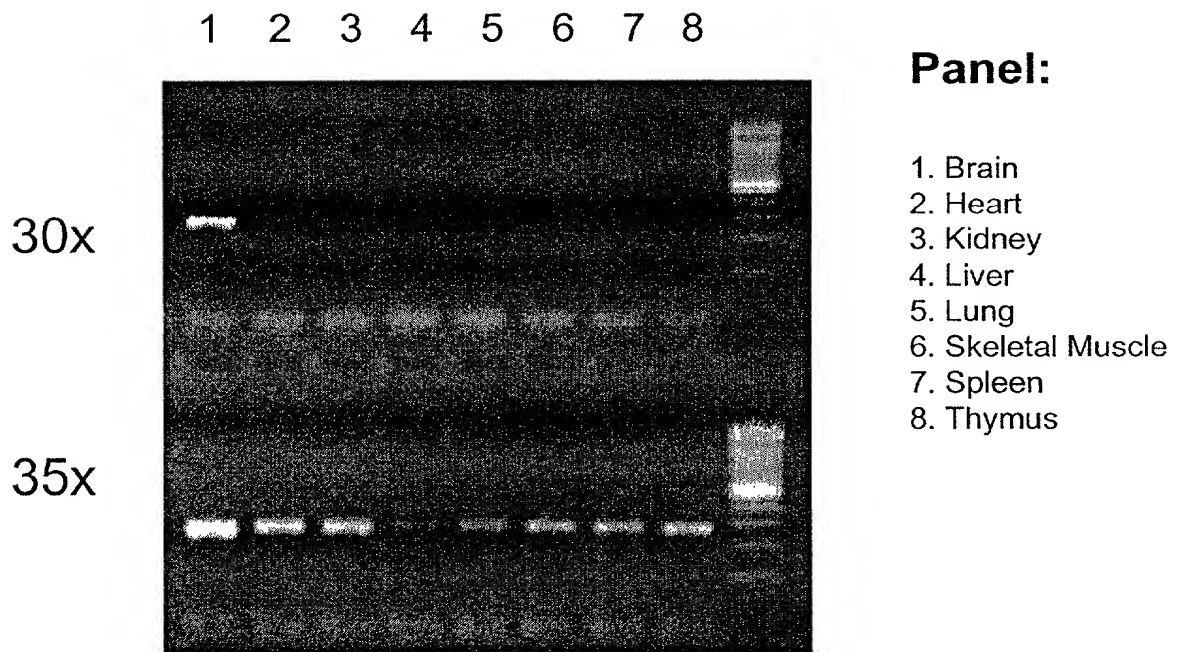


FIG. 9

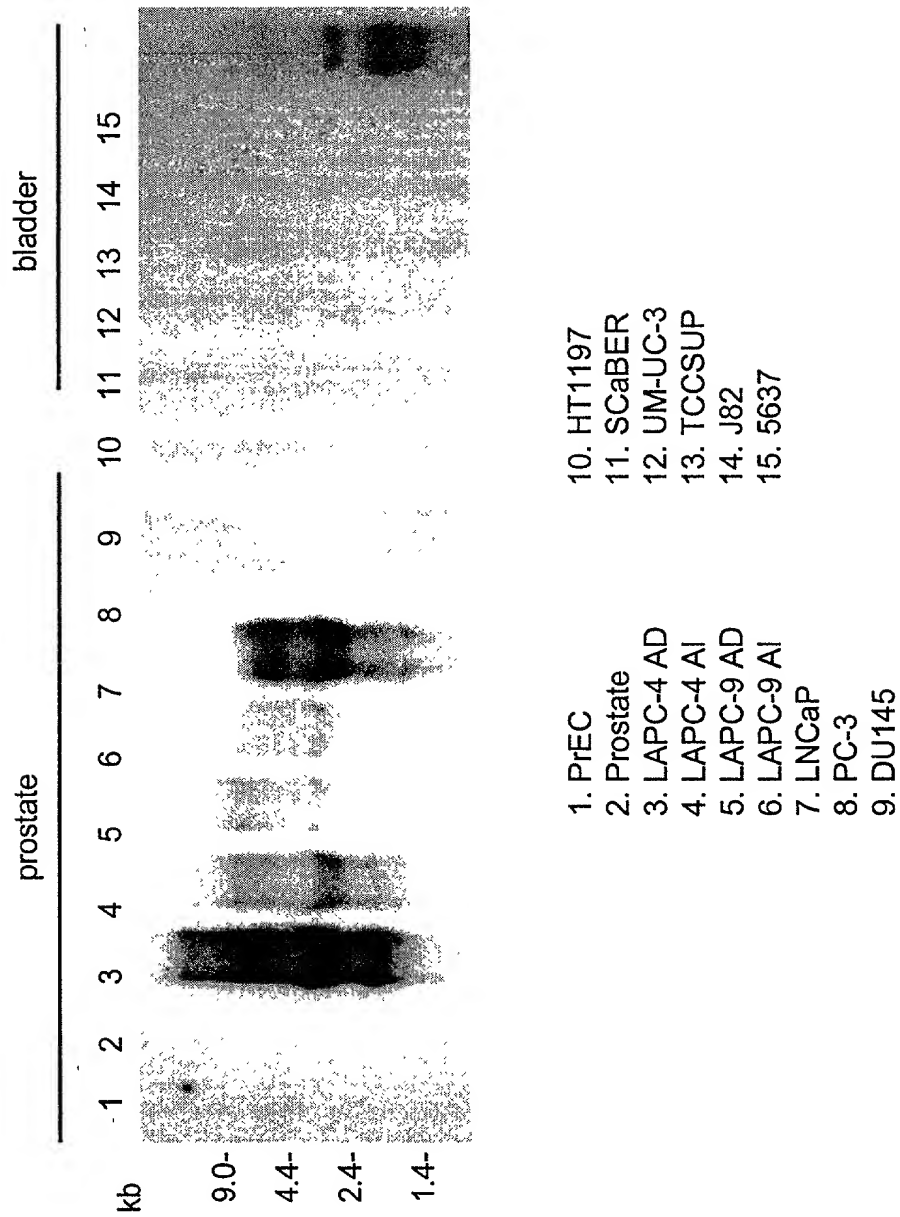


FIG. 10

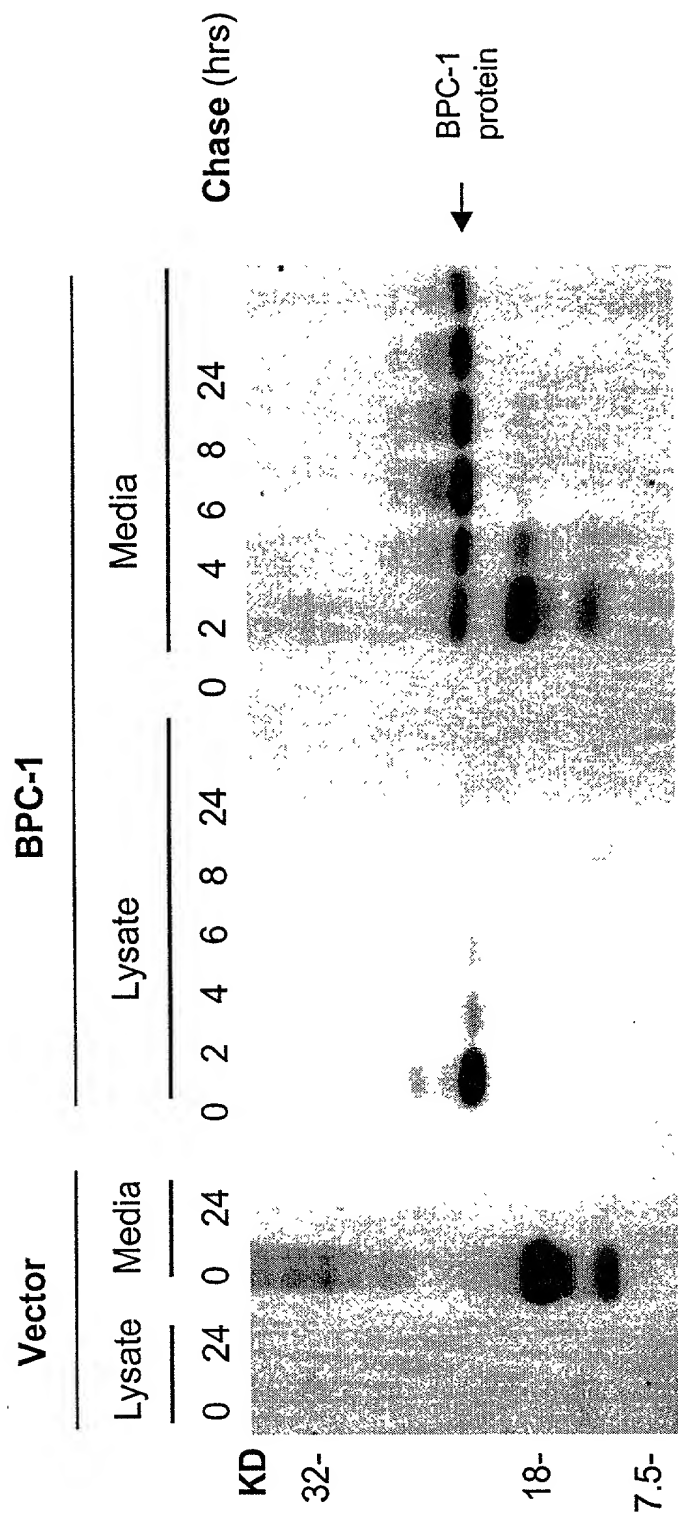
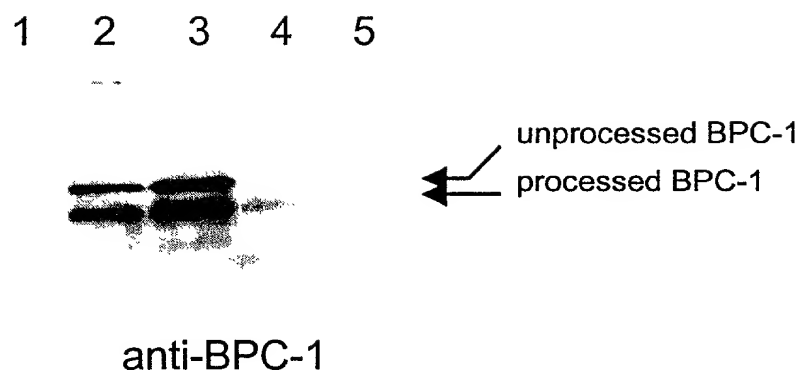


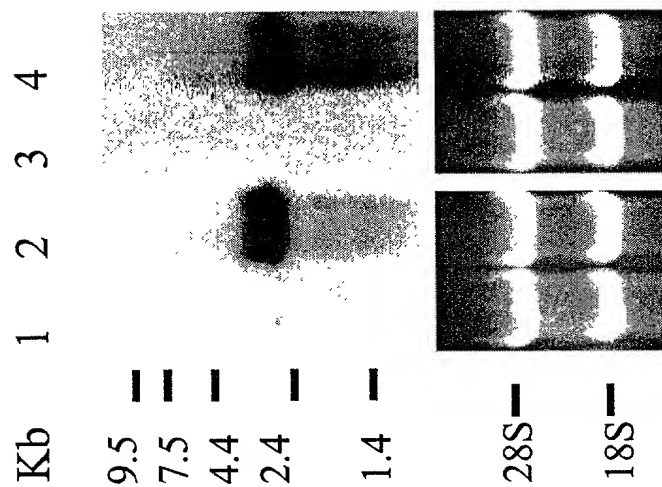
FIG. 11



Lanes:

1. HighFive cell extract- uninfected
2. HighFive cell extract- infected with BPC-1 virus
3. HighFive cell extract - infected with BPC-1 virus
4. HighFive cell media - infected with BPC-1 virus
5. HighFive cell media - infected with BPC-1 virus

FIG. 12



1. PC3/neo
2. PC3/BPC-1
3. 3T3CL7/neo, acute infection
4. 3T3CL7/BPC-1, acute infection

FIG. 13

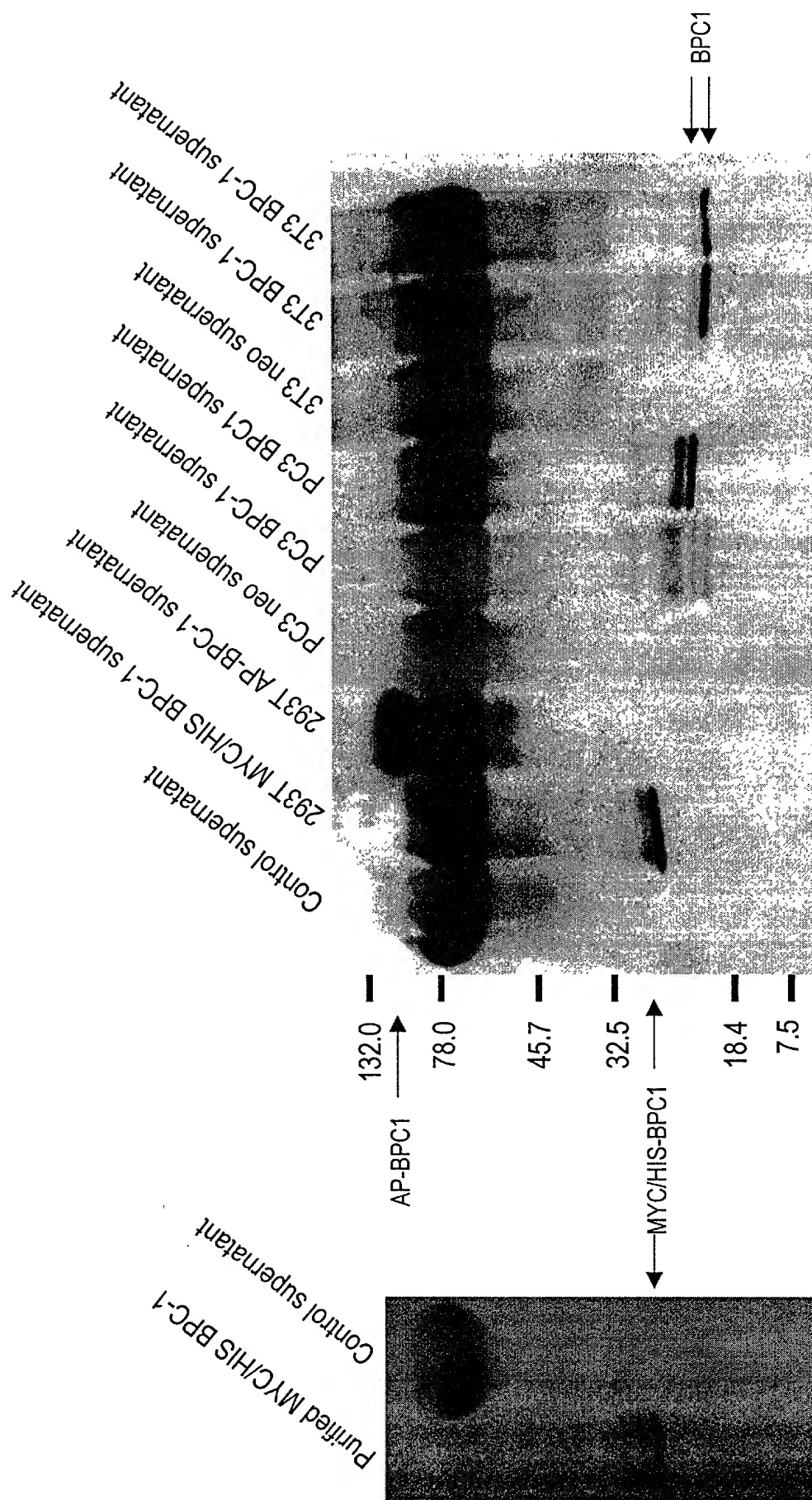


FIG. 14

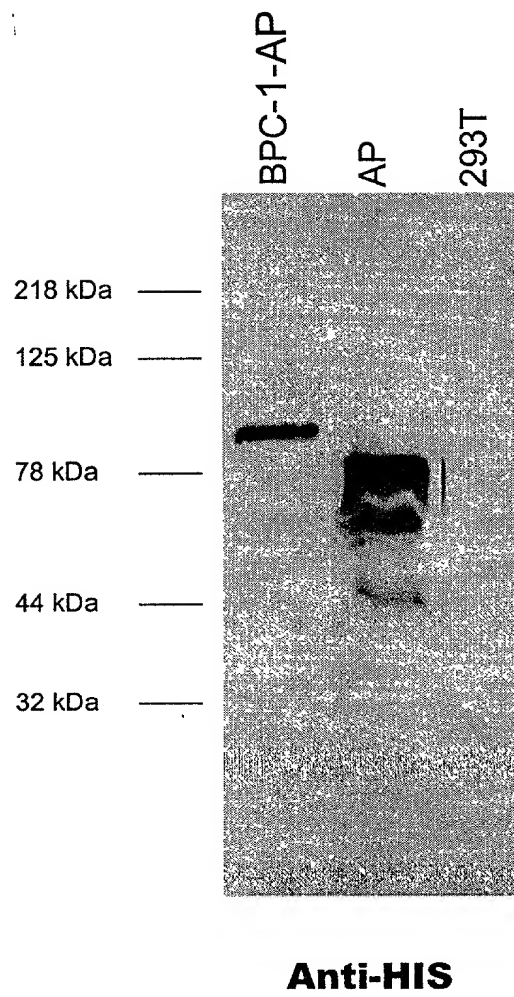
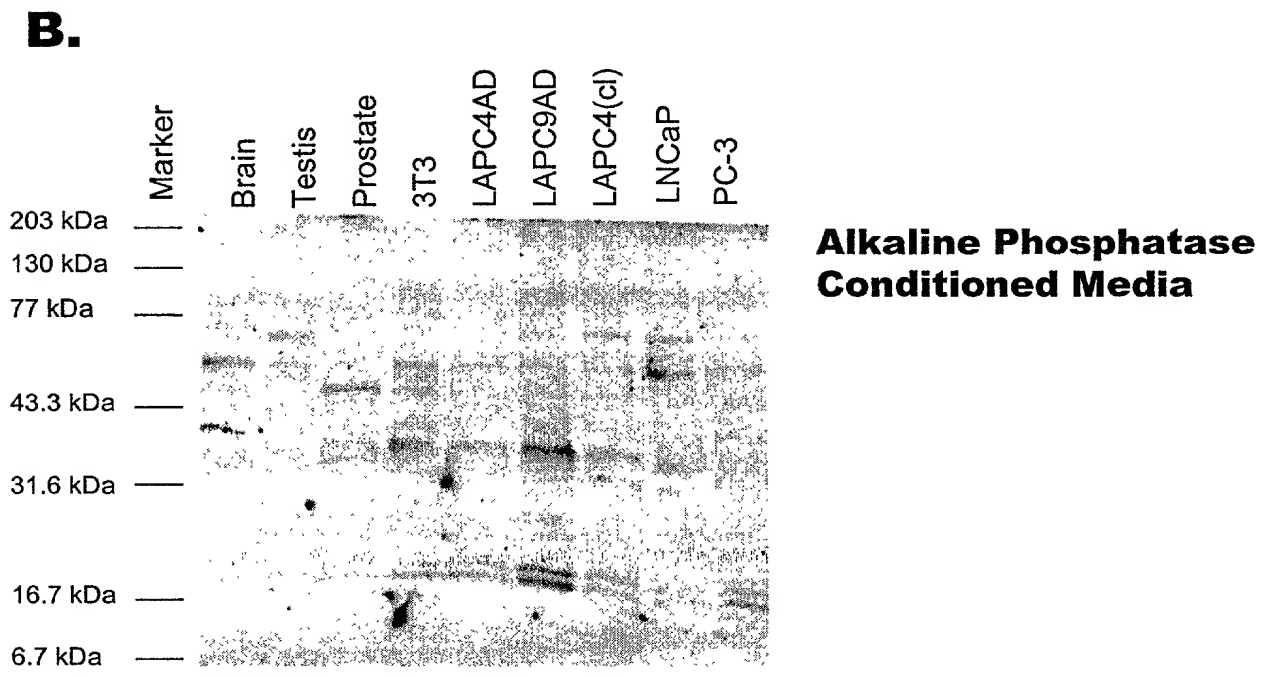
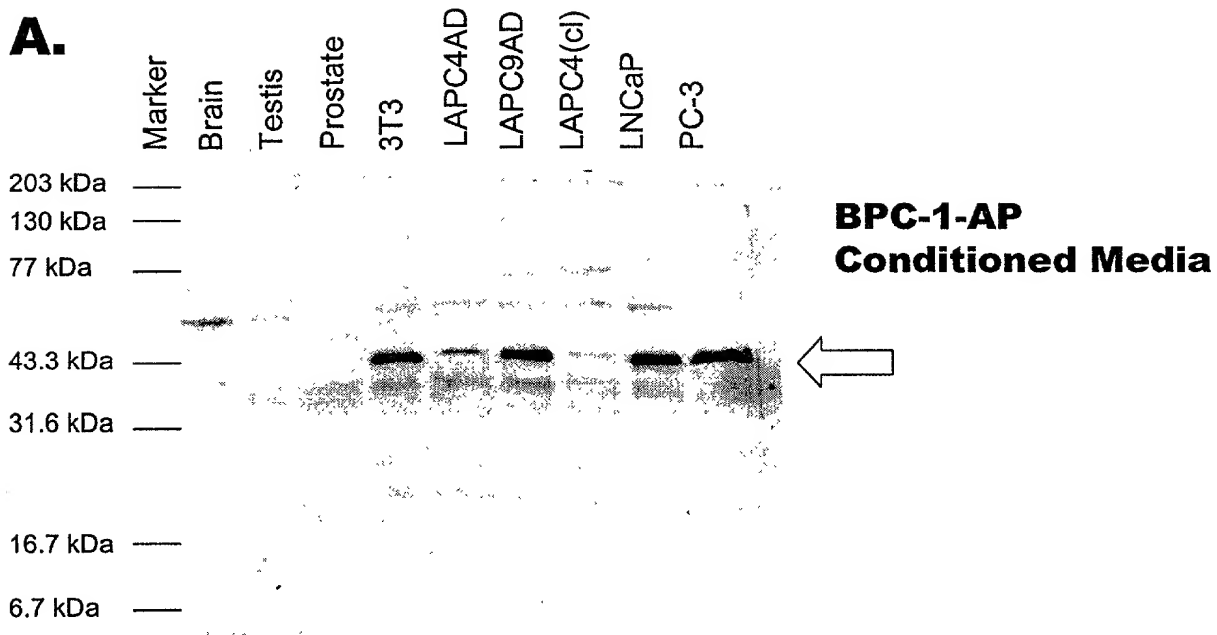




FIG. 15



## DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

BPC-1: A SECRETED BRAIN-SPECIFIC PROTEIN EXPRESSED AND SECRETED BY  
PROSTATE AND BLADDER CANCER CELLS

the specification of which

☒ was filed on August 10, 1999 as United States Application Number 09/374,135

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in and in accordance with the provisions of Title 37 of the Code of Federal Regulations, Section 1.56.

I hereby claim the benefit of under Title 35 of the United States Code, Section 119(e) of any United States provisional application(s) listed below.

Application Number

Filing Date

60/095,982

August 10, 1998

I hereby appoint:

Kenneth K. Sharples

Reg. No. 35,355

as my attorney(s) and/or patent agent(s), with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office in connection therewith.

I further direct that all correspondence concerning this application be directed to:

Kenneth K. Sharples  
Law Office of Kenneth K. Sharples  
80 Fourth Street - P.O. Box 277  
Point Reyes Station, CA 94956

Tel. 415-663-0323  
Fax 415-663-0324

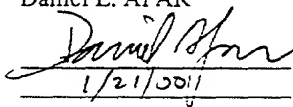
I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

1st Joint Inventor:

Full Name: Daniel E. AFAR

Signature:

Date:

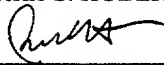
  
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Citizenship: Canada

Residence: Pacific Palisades, California

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Pacific Palisades, CA 90272

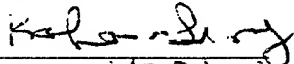
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Signature: 

Date: 1-21-00

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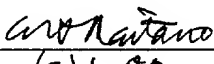
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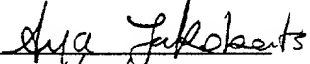
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Signature: 

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P.O. Address: 11720 Bellagio Road, No. 204  
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Signature: 

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